

wherein

R₄ is hydrogen or a methyl group;

R₅ is hydrogen or a group represented by COOY;

Y is hydrogen, an aliphatic hydrocarbon group (including straight-chain, branched, saturated and unsaturated groups) having 1 to 8 carbon atoms, a cyclic hydrocarbon group (including straight-chain, branched, saturated and unsaturated groups) having 3 to 8 carbon atoms, a hydroxyalkyl group (including branched groups) having 2 to 5 carbon atoms, a hydroxyalkenyl group having 2 to 5 carbon atoms, metal (oxidation number I or II), an ammonium group derived from alkylamine having 1 to 20 carbon atoms, alkanolamine having 1 to 20 carbon atoms, cycloalkylamine having 5 to 8 carbon atoms, arylamine having 6 to 14 carbon atoms;

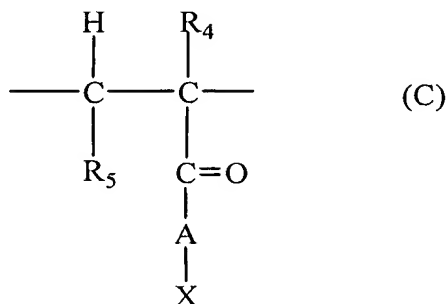
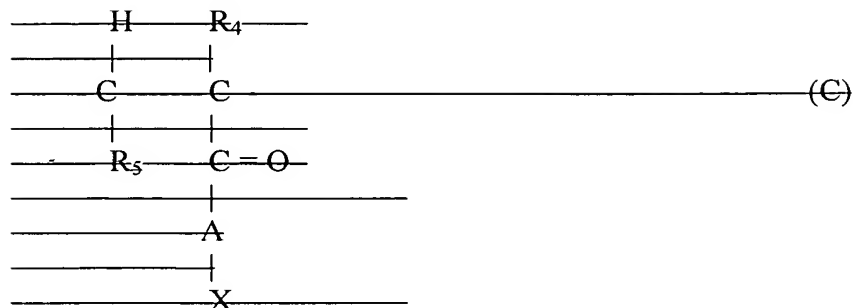
A is oxygen or NR₆; and

R₆ is hydrogen, an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, a sulfonyl group or a sulfanyl group;

and

(0012)

one or more constitutional units represented by formula C:

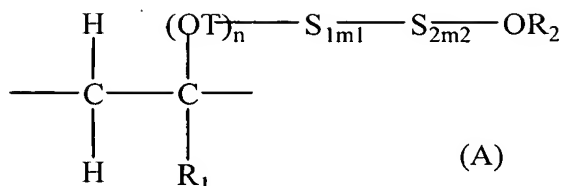


wherein

R₄, R₅ and A have the same meaning as in formula B;

X is an aliphatic hydrocarbon group (including straight-chain, branched, saturated and unsaturated groups) having 1 to 8 carbon atoms, a cyclic hydrocarbon group (including straight-chain, branched, saturated and unsaturated groups) having 3 to 8 carbon atoms, a hydroxyalkyl group (including branched groups) having 2 to 5 carbon atoms, a hydroxyalkenyl group having 2 to 5 carbon atoms, metal (oxidation number I or II), an ammonium group derived from alkylamine having 1 to 20 carbon atoms, alkanolamine having 1 to 20 carbon atoms, cycloalkylamine having 5 to 8 carbon atoms, arylamine having 6 to 14 carbon atoms.

(0023)

$$\begin{array}{c}
 \text{H} \\
 | \\
 \text{---C---} \\
 | \\
 \text{H}
 \end{array}
 \quad
 \begin{array}{c}
 (\text{OT})_n \\
 | \\
 \text{---C---} \\
 | \\
 \text{R}_1
 \end{array}
 \xrightarrow{\text{S}_{1m1}} \xrightarrow{\text{S}_{2m2}} \text{OR}_2 \quad (\text{A})$$


R₁ is hydrogen, an alkyl group having 1 to 4 carbon atoms such as methyl, etc., an alkenyl group having 1 to 4 carbon atoms such as allyl, or an aryl group having 6 to 9 carbon atoms;

R₂ is hydrogen or an alkyl group having 1 to 9 carbon atoms, an alkenyl group having 1 to 9 carbon atoms or an aryl group having 6 to 9 carbon atoms;

T is alkylene (straight-chain and branched alkylene) having 1 to 4 carbon atoms such as methylene, ethylene, propylene, butylene, etc., or arylene having 6 to 9 carbon atoms;

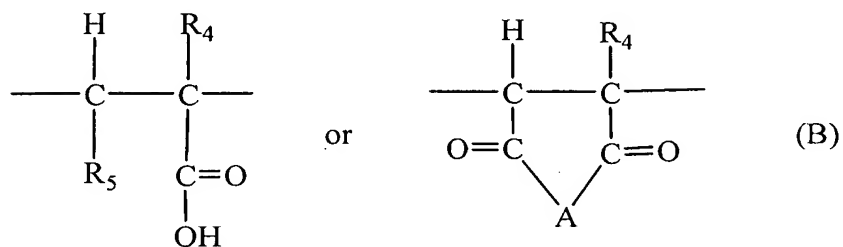
n is 0 or 1;

S₁ and S₂ are, independently of one another, -OC_kH_{2k}- or -OCH₂CHR₃-, with the proviso that k is 2 or 3, R₃ is an alkyl group having 1 to 9 carbon atoms, an aryl group having 6 to 9 carbon atoms; and

$$6 \leq m_1 + m_2 \leq 25.$$

(0024)

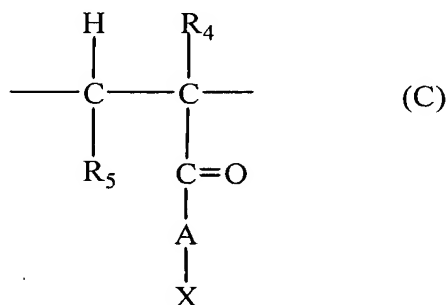
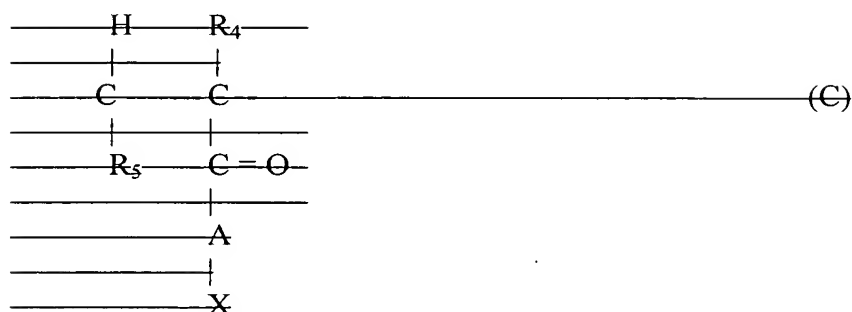
Formula B is



R₆ is hydrogen, an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, a sulfonyl group or a sulfanyl group.

(0025)

Formula C is



with the proviso that

R₄, R₅ and A have the same meaning as in formula B;

X is an aliphatic hydrocarbon group (including straight-chain, branched, saturated and unsaturated groups) having 1 to 8 carbon atoms, a cyclic hydrocarbon group (including straight-chain, branched, saturated and unsaturated groups) having 3 to 8 carbon atoms, a hydroxyalkyl group (including branched groups) having 2 to 5 carbon atoms, a hydroxyalkenyl group having 2 to 5 carbon atoms, metal (oxidation number I or II), an ammonium group derived from alkylamine having 1 to 20 carbon atoms, alkanolamine having 1 to 20 carbon atoms, cycloalkylamine having 5 to 8 carbon atoms, arylamine having 6 to 14 carbon atoms.